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Background Information and Technical Support Document for Proposed Amendments (Useful Net Thermal Output at Combined Heat and Power Budget Sources) to:

310 CMR 7.70

"Massachusetts CO_2 Budget Trading Program"

Regulatory Authority

M.G.L. c. 111, sections 142A-E and M.G.L. c. 21A, § 22

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I. INTRODUCTION

The Massachusetts Department of Environmental Protection (MassDEP) is proposing to amend 310 CMR 7.70 - The Massachusetts CO_2 Budget Trading Program. This regulation implements the Regional Greenhouse Gas Initiative (RGGI) in the Commonwealth. RGGI is a cap and trade program limiting carbon dioxide (CO_2) emissions from power plants greater than 25 megawatts in the RGGI region. The regulations at 310 CMR 7.70 establish a compliance obligation on applicable power plants that is intended to account for and reduce their CO_2 emissions.

The proposed amendments to 310 CMR 7.70 would allow any CO_2 Budget Source that is a Combined Heat and Power (CHP) CO_2 Budget Source to deduct the CO_2 emissions associated with the production of useful net thermal energy from the Combined Heat and Power CO_2 Budget Source's compliance obligation.

The proposed amendments are part of Governor Baker's Executive Order 562 review process only and are not being proposed pursuant to M.G.L. c. 21N, § 3(d), nor intended to address the recent holding in Kain, et al. v. Department of Environmental Protection

II. BACKGROUND AND PURPOSE OF RGGI

In July of 2008, the Massachusetts Green Communities Act[1] (GCA), Chapter 169 of the Acts of 2008 was signed into law. Chapter 169, Section 22 (b) (M.G.L. c. 21A, § 22) provides MassDEP with the legislative authority to participate in RGGI and adopt cap and trade program regulations to implement RGGI. Specifically, the GCA required the MassDEP, in consultation with the Department of Energy Resources (DOER), to adopt rules and regulations establishing a CO_2 cap and trade program to limit and reduce the total CO_2 emissions released by electric generating stations that generate electric power. The GCA further required that all CO_2 allowances under the program, with the exception of approximately 2% of the annual state allowance budget, be offered for sale at auction and defined how those auction proceeds should be used.

RGGI is an ongoing effort among nine Northeast and Mid-Atlantic States (six New England states, NY, DE, and MD) to develop and implement a regional CO_2 cap-and-trade program aimed at reducing CO_2 emissions from large fossil-fuel-fired electricity generating units in the region. The regional program is implemented through similar regulations in each of the participating states.

In January of 2008, MassDEP promulgated 310 CMR 7.70[2] - The Massachusetts CO_2 Budget Trading Program to establishe the rules for implementing the RGGI cap and trade program within the Commonwealth.[3]

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[1] http://www.malegislature.gov/Laws/SessionLaws/Acts/2008/Chapter169
[2] http://www.mass.gov/dep/service/regulations/rggiregf.pdf
[3] For more information on the adoption of the RGGI program go to http://www.mass.gov/eea/agencies/massdep/climate-energy/climate/ghg/massachusetts-and-the-regional-greenhouse-gas-initiative.html

MassDEP adopted 310 CMR 7.70 because implementing the CO_2 Budget Trading Program would provide the following benefits to Massachusetts:

- Reduction in the long-term costs of addressing climate change. Massachusetts may be able to avoid more disruptive measures later.[4]

- Capture of environmental co-benefits. Reducing carbon emissions from the electric generators will result in reductions in the emissions of other pollutants associated with fossil fuel-based electricity generation (e.g., NO_x, SO_2, and Mercury). Additional co-benefits will be realized through the offsets component of the program, which provides incentives for forestry management, improved agricultural manure management, and reduced consumption of natural gas, propane, and home heating oil. The auction of allowances generates revenue used to benefit the environment and energy planning (e.g., through investments in energy efficiency and clean energy technologies).

- Development of new technology. By establishing a cost for emitting CO_2, the CO_2 Budget Trading Program provides a market incentive for developing and deploying technologies that improve the fuel efficiency of electric generation, generate electricity from non-carbon emitting resources (e.g., wind and solar power), and reduce CO_2 emissions from combustion sources.

- Promotion of expanded energy efficiency. The offsets provisions provide incentives for end-use efficiency improvements. In addition, auction proceeds are used for significant energy efficiency programs in the Commonwealth.

- Stimulation of economic development. Massachusetts leads the US in clean energy technology. The CO_2 Budget Trading Program reinforces this leadership by encouraging the growth of clean energy technologies in the region. This stimulus applies indirectly by establishing a cost for carbon emissions, and directly through programs funded by CO_2 allowance auction proceeds.

Under the RGGI program, Massachusetts auctions nearly 100 percent of its CO_2 allowances. Procedures for auctioning allowances are governed by regulations promulgated by the DOER at 225 CMR 13.00.[5] The first six years of the RGGI program have demonstrated the successful operation of the emissions and allowance tracking system database, the allowance auction platform and procedures, market monitoring procedures, and the compliance demonstration process.

[4] Note that when ranked against the nations of the world, RGGI MOU-signatory states represent one of the ten largest sources of carbon dioxide emissions from energy use.

[5] http://www.mass.gov/eea/docs/doer/rggi-auction-reg-final.pdf

III. DESCRIPTION OF THE PROPOSED AMENDMENTS TO THE MASSACHUSETTS CO_2 BUDGET TRADING PROGRAM REGULATION

Combined Heat and Power (CHP) systems simultaneously produce electricity and useful thermal energy from the same fuel source. By doing so, CHP requires less fuel to produce a given energy output. Because less fuel is burned to produce each unit of energy output, CHP reduces air pollution and greenhouse gas emissions. Two of the RGGI states have established programs as part of their CO_2 Budget Trading Programs that recognize the environmental benefits of CHP and create incentives for CHP by establishing CHP set asides of CO_2 allowances or investting auction proceeds in CHP facilties. In recognition of the environmental benefits of CHP, the Department is proposing amendments to the existing Massachusetts CO_2 Budget Trading Program to reward and create incentives for CHP in the Commonwealth by allowing CHP facilities to deduct from their compliance obligation the CO_2 emissions attributable to the production of useful net thermal energy.

The Department is proposing the following amendments to the existing Massachusetts CO_2 Budget Trading Program.

- Adding definitions of a Combined Heat and Power (CHP) CO_2 Budget Source, and Useful Net Thermal Energy.

- Amending the existing regulation at 310 CMR 7.70(6)(e), Deduction for compliance, to allow CHP CO_2 Budget Sources to deduct from their total compliance obligation amount of CO_2 emissions emitted from the CHP Budget Source attributed to the production of Useful Net Thermal Energy . Therefore, the CHP CO_2 Budget Source will not be obligated to purchase CO_2 allowances to cover these CO_2 emissions. This new language is similar to the existing language in the regulation that already allows CO_2 budget sources to deduct the CO_2 emissions attributable to the burning of eligible biomass.

- Requiring the CO_2 authorized account reprensetative to report quarterly the total useful net thermal energy produced by the CO_2 budget source and the total CO_2 emissions associated with the production of useful net thermal energy. The existing monitoring requirements in the Massachusetts CO_2 Budget Trading Program already require Combined Heat and Power budget sources to monitor their net thermal energy.

- Creating a formula to calculate the number of tons of CO_2 emissions associated with the production of useful net thermal energy from the total useful net thermal energy (expressed in million Brithish Thermal Units). The quanity of CO_2 emissions shall be determined by the following equation (rounded to the nearest whole ton):

$$\frac{\text{UNTE}/.80 \times 122 \text{ lb/MMBtu}}{2000 \text{ lb/ton}}$$ [6]

Where:

UNTE = useful net thermal energy (in MMBtu Output) generated by CO_2 budget units at the combined heat and power CO_2 budget source during the quarter.

[6] http://www.iso-ne.com/static-assets/documents/2016/01/2014_emissions_report.pdf see Appendix table 8 pg 32

- Creating A Useful Thermal Output Retirement Account and adding provisions to the regulations that will require MassDEP to retire CO_2 allowances equal to the amount of CO_2 emissions emitted attributed to the production of useful net thermal energy from CHP CO_2 Budget Sources in the Commonwealth during the previous year as reported by the authorized account reprereresentaitve for the CHP CO_2 Budget Source. Retiring allowances equal to the total amount of CO_2 emissions attributed to the production of useful net thermal output from CHP CO_2 Budget Sources in the Commonwealth will maintain the environmental integrity of the regional CO_2 emissions cap established as part of RGGI (i.e., the CO_2 emissions emitted from the production of useful net thermal output from CHP CO_2 Budget Sources will not be emitted from other Budget Sources above the regional CO_2 emissions cap).

- Adding a provision that will allow for CHP CO_2 Budget Sources to deduct their CO_2 emissions attributable to the thermal energy generated during the RGGI three year control period that began in 2015.

- Adding a provision that makes it clear that the ability to deduct CO_2 emissions attributable to the generation of useful thermal output will be effective for the term of a long term contract at the affected facility or until 2021, the date the Federal Clean Power Plan is expected to take effect, whichever is earlier.

The MassDEP will request that each Combined Heat and Power CO_2 Budget Source modify its Air Quality New Source Review permit and subsequently, if applicable, its Title V Air Operating Permit, to include an additional reporting requirement requiring the quarterly submittal of the following parameters: CO_2 emissions (expressed on short tons), useful net thermal output (expressed in million Brithish Thermal Units), and the CO_2 emissions associated with the useful net thermal output. This information will be required for each budget unit at the facility. The report will also require the summation of the resulting facility totals for each of these parameters and the calculation of resulting unit and faciltity total RGGI allowance obligation for the quarter.

The MassDEP will work with the RGGI CO_2 Allowance Tracking System (COATS) administrator to manually enter the compliance obligation for each Combined Heat and Power CO_2 Budget Source into RGGI COATS on a quarterly basis.

VI. ECONOMIC IMPACTS

Macro Economic modeling[7] has projected positive regional economic impacts from the RGGI program. The REMI modeling showed regional economic impacts (cumulative change in Gross State Product, cumulative change in employment, and cumulative change in real personal income) resulting from the 91million ton cap beginning in 2014 to be slightly positive. An independent report on the Economic Impact of the RGGI on Nine Northeast and Mid-Atlantic

[7] REMI modeling results are available at the RGGI Website at: http://rggi.org/docs/ProgramReview/February11/13_02_11_REMI.pdf

States found that RGGI generates economic benefits for each RGGI state and the region, while the states reduce carbon pollution.[8]

The proposed regulations will have negligible impacts to the economics of the underlying RGGI program because the amount of CO_2 emitted from the production of useful net thermal output from a Combined Heat and Power Budget Source is a small percentage of the total Massachusetts RGGI budget.

V. SMALL BUSINESS IMPACT STATEMENT

The proposed regulations are not expected to have any negative impact on small businesses. MassDEP notes that RGGI auction revenues are used to fund energy efficiency investments throughout the Commonwealth including small businesses. However, tetiring CO_2 allowances equal to the Useful Net Thermal Output from any Combined Heat and Power CO_2 Budget Sources will reduce the Commonwealth's auction revenues by the amount of CO_2 allowances retired.

VI. AGRICULTURAL IMPACTS

The proposed regulations are not expected to have any negative impacts on agricultural production in Massachusetts. The existing Massachusetts CO_2 Budget Trading Program will result in greenhouse gas reductions. GHG reductions will help to avoid negative impacts from climate change. For example, it is possible that increases in the frequency of extreme weather events that can destroy crops could be avoided if GHG emissions are reduced. The proposed regulations will not change that result.

VII. IMPACT ON MASSACHUSETTS MUNICIPALITIES

The proposed regulations will not significantly affect cities or towns. MassDEP notes that RGGI auction revenues are used to fund energy efficiency investments throughout the Commonwealth. Retiring allowances equal to the Useful Net Thermal Output at from any Combined Heat and Power CO_2 Budget Sources will slightly reduce the auction revenues returned to the Commonwealth, some of which are invested in grants to municipalities for energy efficiency and renewable energy projects.

VIII. MASSACHUSETTS ENVIRONMENTAL POLICY ACT (MEPA)

Pursuant to 301 CMR 11.03(12) (MEPA Regulations), these proposed regulations will not reduce standards for environmental protection, opportunities for public participation in permitting or other review processes, or public access to information generated or provided in accordance with these regulations. Promulgation of these regulations, therefore, does not require the filing of an Environmental Notification Form under MEPA.

[8]http://www.analysisgroup.com/uploadedfiles/content/insights/publishing/analysis_group_rggi_report_july_2015.pdf

IX. IMPACTS ON OTHER PROGRAMS – AIR TOXICS

Air toxics are a group of chemical air contaminants that are associated with significant environmental impacts or adverse health effects such as cancer, reproductive effects and birth defects. The federal Clean Air Act requires EPA to promulgate source-specific controls based on Maximum Achievable Control Technologies (MACT) for air toxics. MassDEP implements MACT standards for major sources as EPA promulgates them. In addition, MassDEP controls air toxics through reductions of criteria pollutants and through its Toxics Use Reduction Program. Toxics use reduction is a MassDEP priority. Toxics use reduction is defined as in-plant practices that reduce or eliminate the total mass of contaminants discharged to the environment. The proposed regulations will not affect toxics. Reducing carbon emissions from the electric generators could lead to reductions in the emissions of other pollutants associated with fossil fuel-based electricity generation (e.g., NO_x, SO_2, and Mercury). Additional co-benefits could be realized through the offsets component of the program, which would provide incentives for afforestation, improved agricultural manure management, and reduced consumption of natural gas, propane, and home heating oil. The auctioning of allowances will generate revenue that can be used to benefit the environment and energy planning (e.g., through investments in energy efficiency and clean energy technologies).

X. PUBLIC PARTICIPATION

M.G.L. Chapter 30A requires MassDEP to give public notice and provide an opportunity to review the proposed regulations at least 21 days prior to holding a public hearing. The hearing will be held in accordance with the procedures of M.G.L. Chapter 30A. The public hearing notice, proposed regulations and background document will be available on MassDEP's website at: www.mass.gov/dep/public/publiche.htm.

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